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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,055	07/11/2001	David N. Weise	M61.12-0349	9392

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EXAMINER	
RIVERO, MINERVA	
ART UNIT	**PAPER NUMBER**
2655	

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/903,055	WEISE, DAVID N.	
	Examiner	Art Unit	
	Minerva Rivero	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-22 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 11 July 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/11/2001.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Su *et al.* (US Patent 5,418,717).

3. Regarding claim 1, Su *et al.* disclose a method of generating a score for a node identified during a parse of a text segment, the method comprising:

identifying a phrase level for the node (*decomposing sentence into phrase levels*, Col. 13, Lines 22-33);

identifying a word class for at least one word that neighbors a text spanned by the node (*analyzing input text for part-of-speech*, Col. 9, Lines 32-40; *examining words to the left and right of the current word*, Col. 9, Lines 44-49) and

generating a score based on the phrase level and the word class (*composite scores*, Col. 5, Lines 8-14; *syntactic score*, Col. 9, Lines 32-40 and Col. 13, Lines 34-37).

4. Regarding claim 2, Su *et al.* disclose identifying a word class for a word to the left of the text spanned by the node and identifying a word class for a word to the right of the text spanned by the node (*examining words to the left and right of the current word*, Col. 9, Lines 44-49).

5. Regarding claim 3, Su *et al.* disclose generating a score based on the phrase level of the node, the word class of the word to the right of the text spanned by the node and the word class of the word to the left of the text spanned by the node (*composite scores*, Col. 5, Lines 8-14; *syntactic score*, Col. 9, Lines 32-40 and Col. 13, Lines 34-37; *examining words to the left and right of the current word*, Col. 9, Lines 44-49).

6. Regarding claims 6 and 8, Su *et al.* further disclose identifying all possible word classes for at least one word, for a word to the left of the text spanned by the node and for a word to the right of the text spanned by the node (*part-of-speech*, *categories of prior words*, Col. 11, Lines 44-50; *examining words to the left and right of the current word*, Col. 9, Lines 44-49; *examining context information near the current word*, Col. 11, Lines 52-54).

7. Regarding claim 7, Su *et al.* disclose generating a score based in part on all of the identified word classes (*lexical score* and *probability of a word having a category or part-of-speech*, Col. 11, Lines 46-50).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 4, 5 and 9-13, 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Su *et al.* ((US Patent 5,418,717) in view of Kucera *et al.* (US Patent 4,868,750).

10. Regarding claims 10 and 19, Su *et al.* further disclose a parser and computer-readable medium for generating a syntax structure from a text segment, comprising:

a seeding unit for inserting words from the text segment into a candidate list as nodes (*parsing using grammatical relevancy*, Col. 2, Lines 13-21; *storing candidates most likely to be correct*, Col. 6, Lines 6-9 and 11-17);

a node selector for promoting nodes from the candidate list to a node chart (*storing candidates most likely to be correct*, Col. 6, Lines 6-9 and 11-17);

a rule engine for combining nodes in the node chart to form a larger node (*parsing using grammatical relevancy*, Col. 2, Lines 13-21; *score function engine*, Col. 10, Lines 48-53, Fig. 3A, element 311) and

a metric calculator for generating a score for a node formed by the rule engine (*scores determined at node positions*, Col. 4, Lines 66-68) and

using the score for the syntax node when forming the full parse structure (generating and truncating syntax trees on the basis of node scores, Col. 4, Lines 61-68).

However, Su *et al.* do not disclose but Kucera *et al.* suggest the score being based in part on mutual information (*collocational probability*, Col. 2, Lines 28-34). [As evidenced by Lu *et al.* (US Patent 5,819,260), Col. 1, Line 65 – Col. 2, Line 2, *collocation information or mutual information.*]

Therefore it would have been obvious to one ordinarily in the art at the time of the invention to supplement the teachings of Su *et al.* with generating a score by determining a mutual information metric, as suggested by Kucera *et al.*, in order to have the adjacent words and context regarding the node affect the scoring process and produce a more accurate and complete node score.

11. Regarding claims 4 and 9, Su *et al.* do not disclose but Kucera *et al.* suggest generating a score further comprises determining a mutual information metric (*collocational probability*, Col. 2, Lines 28-34). [As evidenced by Lu *et al.* (US Patent

5,819,260), Col. 1, Line 65 – Col. 2, Line 2, *collocation information or mutual information*.]

Therefore it would have been obvious to one ordinarily in the art at the time of the invention to supplement the teachings of Su *et al.* with generating a score by determining a mutual information metric, as suggested by Kucera *et al.*, in order to have the adjacent words and context regarding the node affect the scoring process and produce a more accurate and informed node score.

12. Regarding claims 5, 11 and 20, Su *et al.* do not disclose but Kucera *et al.* do disclose determining a mutual information metric comprises determining a mutual information metric based on the phrase level of the node, the word class of the word to the right of the text spanned by the node and the word class of the word to the left of the text spanned by the node (*phrase identification*, Col. 3, Lines 3-11; *ranking per phrase boundaries*, Col. 25, Lines 27-33; *adjacent tags*, Col. 1, Lines 51-55; Col. 1, Line 65 – Col. 2, Line 3; *major class headers for tags*, Fig. 4).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Su *et al.*, with determining a mutual information metric based on the phrase level of the code, the word class of the word to the right of the text spanned by the node and the word class of the word to the left of the text spanned by the node, as taught by Kucera *et al.*, in order to include relevant context

information in the node score metric and thus ascertain a more accurate and complete node score.

13. Regarding claims 12 and 21, Su *et al.* do not but Kucera *et al.* do disclose the mutual information is determined based on a word class for a word in a text segment (*determining probable tags in order of likelihood*, Col. 1, Line 65 – Col. 2, Line 3; *major class headers for tags*, Fig. 4).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Su *et al.* with determining the mutual information based on a word class for a word in a text segment, as disclosed by Kucera *et al.*, in order to account for relevant grammatical information in the scoring procedure, thus resulting in a more accurate and informed node score.

14. Regarding claim 13, Su *et al.* do not disclose but Kucera *et al.* do disclose the mutual information is determined based on all possible word classes for a word in the text segment (*annotating each word with possible tags*, Col. 1, Line 65 – Col. 2, Line 3).

Therefore it would have been obvious to one ordinarily skilled in the art to supplement the teachings of Su *et al.* with having the mutual information determined based on all possible word classes for a word in a text segment, as taught by Kucera *et al.*, in order to achieve a better parsing result by considering all the reasonable word class possibilities.

15. Regarding claims 14-15 and 22, Su *et al.* do not disclose but Kucera et al. do disclose the mutual information is determined based on a word class for a word to the left/right of a set of words spanned by the node formed by the rule engine (*adjacent tags*, Col. 1, Lines 51-55; Col. 1, Line 65 – Col. 2, Line 3; *major class headers for tags*, Fig. 4).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Su *et al.*, with determining a mutual information metric based on a word class for a word to the left/right of a set of words spanned by the node formed by the rule engine, as taught by Kucera *et al.*, in order to include relevant context information in the node score metric and thus ascertain a more accurate and complete node score.

16. Regarding claim 16, Su *et al.* further disclose a lexicon look-up for determining parts of speech for words in the text segment (Col. 5, Lines 65-68).

17. Regarding claim 17, Su *et al.* do not explicitly disclose but Kucera *et al.* do disclose the seeding unit inserts a node for each part of speech of each word in the text segment (*annotating each word with possible tags*, Col. 1, Line 65 – Col. 2, Line 3; *nodes*, Col. 2, Lines 43-46; *inserting tags in node structures*, Col. 26, Lines 25-28; Fig. 13, step 180).

18. Regarding claim 18, Su *et al.* further disclose the seeding unit inserts nodes representing the beginning of the text segment and the ending of the text segment (*terminal nodes*, Col. 13, Lines 26-31).

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Akers *et al.* (US Patent 6,278,967) disclose a system and method of translating a document using a combined score considering grammatical properties and probabilities of particular dictionary entries.

Pagallo (US 5,317,647) discloses a method for syntactic pattern recognition by applying various rule-based constraints on grammars.

Lu *et al.* (US Patent 5,819,260) discloses a method for text parsing involving various techniques of phrase recognition.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (703) 605-4377. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 305-9508. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MR 1/31/2005